



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1999

									June 1999
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>WISCONSIN, Southeast</u>									
Dane County									
Mendota	06	1355CST			0	0			Hail (1.00)
Rock County									
Evansville	06	1426CST			0	0			Hail (0.75)
Rock County									
1 S Hanover	06	1440CST			0	0	1K		Thunderstorm Wind
Green County									
Monroe	06	1445CST			0	0	2K		Thunderstorm Wind (G61)
Rock County									
2 W Orfordville	06	1445CST			0	0			Funnel Cloud
Green County									
7 ENE Dayton	06	1447CST			0	0			Funnel Cloud
Columbia County									
Fall River	06	1450CST			0	0	1K		Thunderstorm Wind
Rock County									
Orfordville	06	1451CST			0	0	2K		Thunderstorm Wind
Green County									
5 E Juda	06	1455CST			0	0	1K		Thunderstorm Wind
Rock County									
Evansville to Milton	06	1456CST 1502CST			0	2	3K		Thunderstorm Wind (G65)
Sauk County									
Lake Delton	06	1500CST 1505CST			0	0	10K		Thunderstorm Wind
Jefferson County									
Lake Mills	06	1505CST			0	0			Thunderstorm Wind (G50)
Rock County									
4 S Afton	06	1505CST			0	0	10K		Thunderstorm Wind
Sauk County									
Lake Delton	06	1505CST			0	1			Lightning
Columbia County									
Wisconsin Dells	06	1508CST			0	0	2K		Thunderstorm Wind
Dane County									
4 SE Utica to Albion	06	1508CST			0	0	2K		Hail (1.75)
Walworth County									
3 NW Darien to Millard	06	1508CST			0	0	5K		Thunderstorm Wind
Columbia County									
Arlington	06	1518CST			0	0	1K		Thunderstorm Wind
Columbia County									
Columbus	06	1525CST			0	0	3K		Thunderstorm Wind
Dodge County									
2 NW Watertown	06	1525CST			0	0			Hail (0.75)
Jefferson County									
Lake Mills	06	1525CST	0.1	30	0	0	3K		Tornado (F0)
Jefferson County									
Hebron to 5 NE Hebron	06	1530CST 1535CST			0	0	30K		Thunderstorm Wind



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					Killed	Injured	Property	Crops	
<u>WISCONSIN, Southeast</u>									
Waukesha County 3.5 W Mukwonago to Hartland	06	1532CST 1547CST			0	0	40K		Thunderstorm Wind (G70)
Walworth County 1 NW East Troy	06	1535CST			0	0	1K		Thunderstorm Wind
Washington County 6 S Hartford	06	1540CST			0	0	1K		Thunderstorm Wind (G50)
Dodge County Beaver Dam	06	1544CST			0	0	1K		Thunderstorm Wind
Fond Du Lac County Fond Du Lac	06	1544CST			0	1			Lightning
Fond Du Lac County Fond Du Lac	06	1544CST			0	0	3K		Thunderstorm Wind (G60)
Waukesha County 3.9 NW Big Bend	06	1545CST	0.2	40	0	0	100K		Tornado (F1)
Dodge County 2 NW Watertown	06	1547CST			0	0			Hail (0.75)
Walworth County Elkhorn to Lake Geneva	06	1547CST 1555CST			0	0	8K		Thunderstorm Wind
Dodge County Hustisford to Theresa	06	1554CST 1558CST			0	0	5K		Thunderstorm Wind
Jefferson County 3 S Sullivan	06	1555CST			0	0	1K		Thunderstorm Wind
Kenosha County Twin Lakes	06	1555CST			0	0	1K		Thunderstorm Wind
Racine County Burlington	06	1555CST			0	0	1K		Thunderstorm Wind
Kenosha County Salem	06	1557CST			0	0			Funnel Cloud
Washington County West Bend to Germantown	06	1600CST 1610CST			0	0	10K		Thunderstorm Wind (G61)
Ozaukee County Mequon to Saukville	06	1605CST 1615CST			0	0	3K		Thunderstorm Wind
Waukesha County Brookfield	06	1605CST			0	0	15K		Thunderstorm Wind
Dodge County 2 E Juneau	06	1614CST			0	0	1K		Thunderstorm Wind
Ozaukee County 3 N Belgium	06	1623CST			0	0	1K		Thunderstorm Wind
Racine County 2 W Caledonia	06	1630CST			0	0	5K		Thunderstorm Wind
Milwaukee County Milwaukee	06	1634CST			0	0	200K		Thunderstorm Wind
Sheboygan County Cedar Grove	06	1638CST			0	0	10K		Thunderstorm Wind



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WISCONSIN, Southeast

Washington County

3 NE West Bend	06	2200CST			0	0	3K		Hail (1.00)
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Dane County

Madison	06	2230CST			0	0	1K		Thunderstorm Wind
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A significant change in the upper level pattern to a more southwesterly flow allowed tropical-like moisture to return to southern Wisconsin in conjunction with an upper level shortwave trough. The result was the first severe weather outbreak across southern Wisconsin since May 16, 1999. A series of upper level shortwaves continued to move through the Great Lakes region during the remainder of the week into the weekend of June 12-13, 1999. These shortwaves resulted in additional rounds of severe weather across southcentral and southeast Wisconsin.

On June 6th, scattered severe storms eventually became orientated in short lines that produced 2 tornadoes, 10 gustnadoes (classified as thunderstorm wind damage), 3 funnel clouds, hail up to the size of golfballs, damaging straight-line downburst winds up to 80 mph, and isolated torrential rainfalls of around 1 inch within 20 to 30 minutes. In Evansville (Rock Co.), 1/2 inch rain fell within 10 minutes along with large hail. In addition, two people were injured by lightning strikes. Otherwise, numerous large trees and power lines were toppled by the powerful thunderstorm winds.

A weak (F0) tornado briefly touched down on the northwest side of Lake Mills (the body of water), Jefferson County, uprooting and snapping large trees, but not causing any other damage. Another weak (F1) tornado spun up just southwest of the intersection of Oakdale and Skyline roads northwest of Big Bend (Waukesha Co.), damaging 6 homes (one had major damage), and 2 pole sheds. This Waukesha tornado was on the ground for about 2/10 of a mile, and weakened after it crossed Oakdale Rd.

Most interestingly, the number of gustnadoes reported and verified was the greatest in recent memory. A couple of them were captured on video tape. Several of them resulted in tree damage, and all ten were classified as thunderstorm wind damage. Locations of gustnadoes were: 1) Rock county...Orfordville; Walworth County...3NW Darien, 1W Delevan, Millard, and 1NW East Troy; Waukesha County...3.5W Muckwonago, 1WNW North Prairie, and 2 of them 2SW Harland; Washington County...3SW West Bend on Little Cedar Lake. The Little Cedar Lake gustnado actually spun up on the water surface (gustspout?!?) and then moved onshore, damaging a pier and uprooting a couple trees before dissipating. It was observed by a trained spotter. Another trained spotter found themselves briefly inside one of the gustnadoes southwest of Hartland! The fact that so many gustnadoes were plainly visible can be partially attributed to significant amounts of dust and dirt that were picked up off nearby farm fields. This was made possible by dry weather during the preceeding 3 weeks coupled with late planting (little vegetation) of some fields.

Other notable damage reports included: a motorhome was blown onto State Highway 14 near Evansville (Rock Co.), injuring two people; a home in Hebron (Jefferson Co.) was damaged by a wind-toppled tree, while northeast of Hebron a barn was damaged by fallen trees; a pontoon boat was blown 500 feet near Elkhorn (Walworth Co.); a construction trailer west/northwest of North Prairie (Waukesha Co.) was rolled over and damaged by a gustnado; in Brookfield (Waukesha Co.) a construction trailer was damaged after strong thunderstorm winds flipped it over, while elsewhere in Brookfield a toppled tree damaged a home; in Germantown (Washington Co.)... a home had its gutters and shingles damaged while one of its windows was blown in; just west of Cladenio (Racine Co.) a truck was flipped over by strong thunderstorm winds, and a four block area on Milwaukee's west side suffered an intense wet microburst that damaged 14 homes, 17 vehicles, uprooted 100 trees, and knocked over a few power lines.



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WISCONSIN, Southeast

Sauk County									
Lake Delton	08	1615CST 1700CST			0	0			Urban/Sml Stream Fld
Iowa County									
4 SW Dodgeville	08	1644CST			0	0			Hail (1.00)
Marquette County									
3 N Briggsville	08	1650CST			0	0			Hail (0.75)
Columbia County									
Portage	08	1720CST			0	0			Hail (0.75)
Dane County									
3 S Black Earth to Fitchburg	08	1720CST 1725CST			0	0	3K		Thunderstorm Wind (G56)
Sauk County									
Leland	08	1735CST			0	0	1K		Thunderstorm Wind
Columbia County									
Portage	08	1738CST			0	0			Hail (0.75)
Green Lake County									
Markesan	08	1743CST			0	0			Hail (0.75)
Fond Du Lac County									
2 S Ripon	08	1800CST			0	0	1K		Thunderstorm Wind
Sauk County									
Baraboo	08	1800CST 1930CST			0	0	10K		Flash Flood
Dodge County									
Lowell to Juneau	08	1821CST 1835CST			0	0	30K		Hail (1.00)

The second round (June 8th) of severe weather across southcentral and southeast Wisconsin during the week wasn't as widespread as that on June 6th. Nonetheless, there were scattered clusters of severe storms that dumped large hail and/or generated strong downburst winds that toppled large trees and powerlines. Large hail damaged 20 vehicles and stripped several trees clean from Lowell to Juneau (Dodge Co.). In addition, torrential rains resulted in isolated flash flooding or urban/small stream flooding. Flash flooding (soil erosion and gravel shoulder washouts) occurred in Baraboo (Sauk Co.) after 3/4 inch of rain fell in 20 minutes on top of a saturated ground. Water levels on some streets reach 1 to 3 feet in depth.

Sheboygan County									
4 N Kohler	10	0900CST			0	0			Hail (1.00)
Washington County									
Hartford	10	1244CST			0	0			Funnel Cloud
Washington County									
2 NE Hartford	10	1250CST			0	0			Hail (0.75)
Sauk County									
North Freedom	10	1310CST			0	0	1K		Thunderstorm Wind
Walworth County									
Elkhorn	10	1336CST			0	0	15K		Thunderstorm Wind
Walworth County									
Elkhorn	10	1340CST			0	3			Lightning
Washington County									
West Bend	10	1345CST			0	0	1K		Thunderstorm Wind
Racine County									
Burlington	10	1403CST			0	0	1K		Thunderstorm Wind



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<u>WISCONSIN, Southeast</u>							
Jefferson County							
Concord	10	1415CST			0 0	1K	Thunderstorm Wind
Washington County							
West Bend to Germantown	10	1420CST 1440CST			0 0	3K	Thunderstorm Wind (G52)
Waukesha County							
Oconomowoc	10	1425CST			0 0	1K	Thunderstorm Wind
Milwaukee County							
Milwaukee	10	1430CST 1700CST			0 0	75K	Flash Flood
Sauk County							
Leland	10	1430CST 1600CST			0 0	20K	Flash Flood
Walworth County							
3 S Whitewater	10	1440CST			0 0		Hail (0.75)
Waukesha County							
Waukesha	10	1445CST			0 0	1K	Thunderstorm Wind
Ozaukee County							
Fredonia	10	1500CST			0 0	1K	Thunderstorm Wind
Waukesha County							
Waukesha	10	1505CST 1510CST			0 0	1K	Thunderstorm Wind
Walworth County							
Delavan	10	1545CST 1600CST			0 1	10K	Thunderstorm Wind
Walworth County							
Fontana	10	1555CST			0 0		Funnel Cloud
Columbia County							
Columbus	10	1630CST 1800CST			0 0		Urban/Sml Stream Fld
Fond Du Lac County							
2 N Ladoga	10	1630CST 1800CST			0 0		Urban/Sml Stream Fld
Dane County							
1 E East Bristol	10	1650CST			0 0	200K	Thunderstorm Wind
Dodge County							
2 W Beaver Dam	10	1700CST 1800CST			0 0		Urban/Sml Stream Fld
Columbia County							
Fall River to Columbus	10	1706CST 1710CST			0 0	2K	Thunderstorm Wind
Columbia County							
1 NW Columbus	10	1728CST			0 0	1K	Thunderstorm Wind
Walworth County							
3 SE Lake Geneva	10	1728CST			0 0	1K	Thunderstorm Wind

The 3rd round (June 10th) of severe weather during the week was more widespread than the 2nd round. The usual large hail and/or damaging thunderstorm wind reports were common (large trees knocked over), as well as isolated flash flooding or urban/small stream flooding. In addition, 3 people were injured in Elkhorn (Walworth Co.) when lightning struck nearby. Torrential rains of 1 to 2 inches within 1 to 2 hours, on top of saturated soil, hit the Rock Springs to Leland area in Sauk County. A road near Leland was washed out by the flood waters. Excessive rainfall also generated urban-type flooding in the Columbus (Columbia Co.) area in which water was 4 to 6 inches deep on some roads. Just west of Beaver Dam (Dodge Co.), 2.5 inches of rain fell in only 45 minutes, resulting in urban-type flooding. Water levels on some roads ranged from 6 inches to 1 foot. Flash flooding hit the south side of the city of Milwaukee (Milwaukee Co.) after 2 to 3 inches of rain fell within 1.5 hours. Several cars were reported to be "floating" down the streets and some were flipped over. Urban/small stream flooding occurred north of Ladoga (Fond du Lac Co.)



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WISCONSIN, Southeast

along and near Highway 26, after 1 to 2 inches fell in a 2 hour period. Powerful downburst winds blew 2 cars and a semi-tractor trailer off Interstate 43 near Elkhorn (Walworth Co.). Later on, powerful thunderstorm winds flipped yet another semi off Interstate 43 near Delavan (Walworth Co.). The driver was injured.

Racine County									
Burlington	11	1730CST 1930CST			0	0			Urban/Sml Stream Fld
Sheboygan County									
Plymouth	11	1735CST			0	2			Lightning
Walworth County									
4 SW Lake Geneva	11	1735CST			0	0	1K		Thunderstorm Wind
Waukesha County									
Brookfield	11	1745CST			0	0			Thunderstorm Wind (G51)
Sheboygan County									
Sheboygan	11	1805CST			0	0	1K		Thunderstorm Wind
Waukesha County									
Sussex to New Berlin	11	1805CST 1819CST			0	0			Thunderstorm Wind (G56)
Walworth County									
Richmond	11	1816CST			0	0			Hail (1.00)
Washington County									
West Bend	11	1825CST			0	0	1K		Thunderstorm Wind
Jefferson County									
Hebron to Helenville	11	1830CST			0	0	3K		Thunderstorm Wind
Ozaukee County									
2 W Cedarburg	11	1830CST			0	0			Hail (0.75)
Waukesha County									
3 S Dousman	11	1845CST			0	0	1K		Thunderstorm Wind

The 4th round of severe weather during the week occurred on June 11th. Fortunately, it was not widespread. Small clusters of severe thunderstorms dumped large hail and flooding rains, and generated powerful, damaging winds. Besides large hail, 1.35 inches of rain fell in 1 hour in Richmond (Walworth Co.). In addition to damaging winds in the Sussex to New Berlin (Waukesha Co.) area, hail up to 3/4 inch in diameter was noted. Two people were injured after being struck by lightning at the Plymouth Rock Camp Grounds (Sheboygan Co.).

WIZ065>066-068-070>072 Waukesha - Milwaukee - Green - Walworth - Racine - Kenosha
13 0800CST 1430CST 0 0 900K Flood

After experiencing several round of moderate to heavy rains during the week of June 6-12, parts of southcentral and southeast Wisconsin suffered yet another round of heavy rains on June 13th. The result was widespread flooding of rivers, streams, creeks, and urban areas. Many roads were closed, and there were several cases of soil erosion, road shoulder washouts. As always, many basements sustained damage to personal property. Estimated property damage for each county was \$100,000 for Green Co., \$125,000 for Walworth Co., \$150,000 for Racine Co., \$300,000 for Kenosha Co., \$75,000 for Waukesha Co., and \$150,000 for Milwaukee Co.

Up to 1.5 inches fell in eastern Green County, resulting in closed roads in the Albany, Brooklyn, and Brodhead areas. The Sugar River at Brodhead (Green Co.), crested at 7.00 feet at 0745CST on June 15th, or 2 feet above flood stage. At this location it was above flood stage from 2030CST on June 13th through 1545CST on June 16th.

Anywhere from 3.1 to 4.1 inches of rain fell over the eastern parts of Waukesha and Walworth Counties, southern Milwaukee County, and Kenosha and Racine Counties in an 18-hour period from 0000CST to 1800CST. Most of it fell within a couple hours either side of 1100CST. In eastern Waukesha County, the cities of Elm Grove, Brookfield, and New Berlin had the worst flooding. In Milwaukee County, the deep tunnel system overflowed, basements were flooded, the Hale Interchange on I-94 was closed, and Summerfest on the lakefront did not open. A walk-bridge over the Menomonee River in Wauwatosa was washed away by the flood waters.



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WISCONSIN, Southeast

The Fox River in western Racine and western Kenosha County flooded at levels not seen for 12 years. Seventy-five homes were evacuated in the villages Salem, Silver Lake, and Wheatland in Kenosha County. Many cars stalled in rushing water that reached a depth of 3 to 4 feet on some roads. Several roads were closed, and some residents had to be rescued from their homes because the water was rising 1 inch per hour on the Fox River. In Burlington (Racine Co.), all city parks were completely flooded, and serious soil erosion in a couple new housing developments was noted. Due to the heavy rains in the Fox River watershed, the Fox River at New Munster (Kenosha Co.) eventually crested at 13.68 feet at 0215CST on June 15th, or 3.68 feet over flood stage. The flooding was characterized as "moderate." The river at this location was above flood stage from 1700CST on June 12th through 1700CST on June 22nd.

Fond Du Lac County

3 WNW Pipe	16	1357CST			0	0			Funnel Cloud
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Fond Du Lac County

Pipe	16	1402CST			0	0			Hail (0.75)
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An isolated thunderstorm, embedded in a cluster of showers, moved southeast at 25 mph, dumped heavy rains, and produced 3/4 inch diameter hail and 40 knot winds in Pipe. The storm was low-topped, only reaching about 25,000 feet (cold air aloft).

Racine County

Ives Grove	22	1600CST			0	0	15K		Lightning
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Lightning struck the Racine Co. Public Works building, resulting in the damage to the lighting system, and personal computers

Kenosha County

Silver Lake	28	0000CST 0200CST			0	0			Urban/Sml Stream Fld
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Rock County

Janesville	28	0000CST 0200CST			0	0			Urban/Sml Stream Fld
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Walworth County

Delavan	28	0000CST 0200CST			0	0			Urban/Sml Stream Fld
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Dane County

Madison	28	1300CST 1500CST			0	0			Urban/Sml Stream Fld
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Dane County

Marshall	28	1300CST 1500CST			0	0			Urban/Sml Stream Fld
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Dane County

Middleton to Madison	28	1325CST 1335CST			0	0			Hail (0.75)
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Jefferson County

1 W Waterloo	28	1425CST			0	0			Hail (0.75)
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Dodge County

2 N Watertown	28	1500CST			0	0			Hail (1.00)
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Jefferson County

3 SE Sullivan	28	1503CST			0	0			Hail (0.88)
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Marquette County

Packwaukee	28	1510CST			0	0	2K		Thunderstorm Wind (G52)
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Waukesha County

4 SW Dousman	28	1510CST			0	0			Hail (0.75)
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Marquette County

4 E Montello	28	1520CST			0	0			Hail (0.75)
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Milwaukee County

Milwaukee	28	1545CST 1800CST			0	0			Urban/Sml Stream Fld
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WISCONSIN, Southeast

Green Lake County

Green Lake	28	1555CST			0	0	1K		Thunderstorm Wind
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Washington County

West Bend	28	1905CST			0	0			Funnel Cloud
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Deep tropical moisture, pooled near a frontal boundary, resulted in two separate rounds of thunderstorms across southcentral and southeast Wisconsin. The 1st round consisted primarily of heavy rains and urban/small stream flooding. The 2nd round consisted of primarily large hail and heavy rains, although a wet microburst did generate powerful winds which levelled some large trees in Packwaukee (Marquette Co.) and Green Lake (Green Lake Co.).

In the couple hours just after 0000CST, small clusters of thunderstorms, moving slowly east at 15 mph, dumped heavy rains in scattered areas. Estimated rainfall totals based on WSR-88 Doppler radar were in the 1 to 2 inch range within 1 to 1.5 hours. The result was urban street flooding in Janesville (Rock Co.), Delavan (Walworth Co.), and Silver Lake (Kenosha Co.). Water was reported to be 4 to 8 inches deep on some roads. During the afternoon hours it was the same story when urban flooding was reported in Madison and Marshall (Dane Co.), and in the city of Milwaukee (Milwaukee Co.). At the NWS Forecast office 3SE of Sullivan (Jefferson Co.), 1.14 inches fell in 20 minutes! A total of 1.14 inches fell in 1 hour in Wauwatosa (Milwaukee Co.), and 1.42 inches in 30 minutes near the intersection of Capitol Drive and the Milwaukee River north of downtown Milwaukee.